

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

July 9, 2018

Jennifer DePietro Regulatory Affairs Associate H&S Chemical Division Lonza Inc. 90 Boroline Road Allendale, NJ 07401

Subject: Notification per PRN 98-10 – Minor label modifications

Product Name: Formulation HWS-256 EPA Registration Number: 47371-129 Application Date: May 30, 2018

Decision Number: 541673

Dear Ms. DePietro:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Antimicrobials Division (AD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, you may contact Tara Flint via email at flint.tara@epa.gov or Eric Miederhoff at Miederhoff.eric@epa.gov.

Sincerely,

Eric Miederhoff Product Manager 31

Regulatory Management Branch I Antimicrobials Division (7510P) Office of Pesticide Programs Note to Reviewer:

[Items in brackets [AAA] are optional and may/may not be included on final label] {Items in braces {AAA} are for information purposes and will not appear on final label}

FORMULATION HWS-256

ONE-STEP DISINFECTANT GERMICIDAL DETERGENT AND DEODORANT

Disinfectant – Pseudomonacidal – Staphylocidal – Salmonellacidal – Bactericidal – Fungicidal – Mildewstatic – *Virucidal – Sanitizer

FLORAL / CITRUS / FRESH / CLEAN / LEMON / PINE / MINT [scent] [fragrance] [odor] [scented]

Active Ingredients:

Didecyl dimethyl ammonium chloride	10.14%
n-Alkyl (C ₁₄ 50%, C ₁₂ 40%, C ₁₆ 10%) dimethyl benzyl ammonium chloride	
Inert Ingredients:	
Total	100.00%

KEEP OUT OF REACH OF CHILDREN

DANGER [PELIGRO]

See [right] [left] [side] [back] panel for Precautionary Statements and First Aid

EPA Reg. No. 47371-129 EPA Est. No. (insert Est. No. here) NET CONTENTS (insert container size here)

[DOT Symbols]
[Country of origin (insert country)]
[Manufactured in (insert country)]
[Barcode]

H&S CHEMICALS DIVISION c/o LONZA INC. 90 Boroline Road Allendale, NJ 07401

NOTIFICATION

47371-129

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

07/09/2018

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. Corrosive. Causes irreversible eye damage and skin burns. Harmful if inhaled, swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wear protective eyewear (goggles, face shield or safety glasses), protective clothing and protective gloves (rubber or chemical resistant). Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

FIRST AID

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

{Note to reviewer. If container size is 5 gallons or greater, the following Environmental Hazards statements will be used:}

ENVIRONMENTAL HAZARDS

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

{Note to reviewer: Pages 3-8 are considered optional marketing language.}

- Concentrate [Concentrated]
- Neutral [Neutral pH]
- Disinfects [Disinfectant]
- Cleans [Cleaner]
- Deodorizes [Deodorizer]
- Sanitizes [Sanitizer]

A multi-purpose, neutral pH, germicidal detergent and deodorant effective in hard water up to 200 ppm [calculated as CaCO₃] in the presence of a moderate amount of soil, 5% organic serum, tested according to the AOAC Use-dilution Test. Disinfects, cleans, and deodorizes in one labor-saving step.

For use in hospitals and nursing homes as a disinfectant. Use in schools, colleges, universities, commercial and industrial institutions, office buildings, veterinary clinics, animal life science laboratories, zoos, federally inspected meat and poultry plants, equine farms, tack shops, pet shops, airports, kennels, hotels, motels, poultry farms, turkey farms, dairy farms, hog farms, breeding establishments, grooming establishments, funeral homes, and households. Use to clean and disinfect non-medical [i.e. industrial and fire-fighting] respirators in industrial, commercial and institutional premises.

Disinfects, cleans, sanitizes and deodorizes the following hard nonporous inanimate surfaces: floors, walls, [non-medical] metal surfaces, [non-medical] stainless steel surfaces, glazed porcelain, plastic surfaces [such as polypropylene, polystyrene, etc.].

Use [on] [to clean and disinfect] [clean and sanitize] nonporous athletic mats, wrestling mats, gymnastic mats, exercise equipment and training tables.

Use [on] [to clean and disinfect] [clean and sanitize] nonporous personal protective safety equipment, wrestling headgear, boxing headgear, protective headgear, athletic helmets, hard hats, half mask respirators, full face breathing apparatus, gas masks, goggles, spectacles, face shields, hearing protectors, and ear muffs. Rinse all equipment that comes in prolonged contact with skin with warm water and allow to air dry before reuse. [Caution: Cleaning at the 120°F temperature will avoid overheating and distortion of the personal safety equipment that would necessitate replacement.]

- for Poultry Premise Sanitation [Hatcheries]: Egg Receiving Area, Egg Holding Area, Setter Room, Tray
 Dumping Area, Trays, Buggies, Racks, Egg Flats, Chick Holding Room, Hatchery Room, Chick Processing
 Area, Chick Loading Area, Poultry Buildings, Ceilings, Sidewalls and Floors, Drinkers, and all other Poultry
 House related Equipment, and other hard nonporous surfaces in the Hatchery Environment.
- for Swine Premise Sanitation: Waterers and Feeders, Hauling Equipment, Dressing Plants, Loading Equipment, Farrowing Barns and Areas, Nursery, Blocks, Creep Area, Chutes.
- for Farm Premise Sanitation: floors, walls, feed racks, mangers, troughs, automatic feeders, fountains and waterers, forks, shovels, scrapers and other nonporous surfaces in barns, pens, stalls, chutes and other facilities and fixtures occupied or traversed by animals.

For use in (insert name of automated dilution system here) [automated] [dilution system].

For use in:

- Federally inspected meat and poultry plants on all hard, nonporous surfaces in inedible product processing areas, non-processing areas, and / or exterior areas. All surfaces must be thoroughly rinsed with potable water.
- Federally inspected meat and poultry plants as a floor and wall cleaner for use in all departments. Food products and packaging material must be removed from the room or carefully protected. All surfaces must be thoroughly rinsed with potable water.
- Federally inspected meat and poultry plants as a disinfectant agent for use in all departments. Food products and packaging materials must be removed from the room or carefully protected. Use product in accordance with its label. All surfaces must be thoroughly rinsed with potable water.

For use in tanning salons.

For use on [tanning beds], [and] [tanning equipment].

Kills [Effective against] [99.9% of] Influenza A virus associated with the flu.

{Note to reviewer: If additional labeling/inserts/reference sheets are used, one of the following statements will appear on the container label:}

See [additional labeling] [reference sheet] [enclosed in each case] for [a complete list of [pathogenic] organisms] [additional features, claims, directions for use] [claimed for this product] [eliminated by this product].

See [Reference Sheet] [insert] [product insert] for additional [product information] [and] [directions for use].

Formulation HWS-256 is effective at controlling mold and mildew odor on mattresses, pillows and shower curtains. **{Not for Use in California}**

Use Formulation HWS-256 in the laundry to control odors on musty bedding and linens. Test on a small inconspicuous area before using.

Use Formulation HWS-256 on mildew stains.

Use Formulation HWS-256 on mildew stains in damp areas such as bathrooms, showers, kitchens, basements and laundry rooms. **{Not for Use in California}**

Use Formulation HWS-256 in work areas such as tool rooms and garages for odor control and light duty cleaning.

Use Formulation HWS-256 to remove odors caused by flooding and smoke from fires.

Formulation HWS-256 leaves a clean fresh scent.

Formulation HWS-256 provides long lasting freshness against tough [pet] odors from litter boxes and pet accidents.

Formulation HWS-256 [Kills] [Eliminates] [Removes] [Destroys] avian influenza A (H5N1) virus on pre-cleaned hard non-porous environmental surfaces

Formulation HWS-256 [Kills] [Eliminates] [Removes] [Destroys] (Insert pathogen or pathogens from lists on pages 7 and 8) on [pre-cleaned] hard non-porous environmental surfaces

Formulation HWS-256 [Kills] [Eliminates] [Removes] [Destroys] [Germs] [Bacteria] [Viruses*] [on [pre-cleaned] hard non-porous environmental surfaces]

Formulation HWS-256 is a sanitizer for hard nonporous non-food contact surfaces] according to the method for Sanitizers - Non-Food Contact Surfaces, modified in the presence of 400 ppm hard water plus 5% organic serum in 60 seconds against:

Enterobacter aerogenes Staphylococcus aureus

Formulation HWS-256 is effective against [Carbapenem-resistant Enterobacteriaceae] [CRE], including:

- Enterobacter cloacae NDM-1 positive
- Escherichia coli NDM-1 positive
- Klebsiella pneumoniae NDM-1 positive

IAREAS OF USE:1

Use Formulation HWS-256 in:

{Note to reviewer: Each entry below also represents a graphic depicting the corresponding area of use. The graphics will only represent individual objects or outsides or insides of buildings as described below. No people, animal, or food will be depicted in graphics.}

Bathrooms

Homes [households]

Kitchens

Clinics

Dental offices Health Care Facilities

Hospitals

Medical Offices

Medical Related Facilities

Nursing homes

Sick Rooms

Day care centers

Nurseries

Bars

Cafeterias

Convenience stores

Food processing plants

Food storage areas Institutional kitchens

Restaurants

USDA inspected food processing facilities

Athletic facilities

Barber shops

Business and office buildings

Colleges

Correctional facilities Dressing rooms

Exercise facilities

Factories Hotels

Institutional facilities

Institutions

Locker rooms

Morgues Mortuaries Motels

Prisons
Public facilities

Public rest rooms

Schools

Shower and bath areas

Salons [Beauty] Tanning Salons Tattoo Parlors

Spas

Universities

Hog farms

Kennels

Poultry farms

Pet animal quarters

Pet shops

Turkey farms

Zoos

Airplanes

Airports

Ambulances

Boats

Buses

Campers

Cars

Emergency [Police] [EMS] [Fire] [Rescue] vehicles

Mobile homes

Railcars

Ships

Taxis

Trailers

Trains

Transportation terminals

Trucks [Box Trucks]

[TYPES OF SURFACES:]

Use Formulation HWS-256 on washable hard, nonporous surfaces of:

{Note to reviewer: Each entry below also represents a graphic depicting the corresponding type of surface. No people, animal, or food will be depicted in graphics. Only exteriors of microwaves and refrigerators will be depicted. Toy graphics will be submitted to Agency for review.}

Appliances, exteriors of Bathroom fixtures Bathtubs [Fiberglass]

Cabinets Cages Chairs

Coils and drain pans of air conditioning and refrigeration equipment and heat pumps

Conductive flooring Counters [countertops] Countertop laminates

Desks Doorknobs Floors

Garbage cans Highchairs Kennel runs

Microwave ovens, exteriors of

Outdoor furniture [except cushions and wood frames]

Refrigerators, exteriors of

Refrigerated storage and display equipment

Telephones

Other hard nonporous surfaces made of:

Glazed ceramic

Glazed enameled surfaces Glazed porcelain

Laminated Surfaces
Metal

Plastic [such as polystyrene or polypropylene]

Sealed granite
Sealed limestone
Sealed marble
Sealed slate
Sealed stone
Sealed terra cotta
Sealed terrazzo

Stainless steel Upholstery, vinyl and plastic

Woodwork, finished

Non-critical medical device surfaces:

Beds [Medical] [Hospital]

Bed frames
Bed rails
Crutches
Defibrillators
Gurneys

Non-critical [hospital] [medical] equipment surfaces

[Medical] Examining tables [Medical] [Hospital] Lamps

Resuscitators

[Medical] [Hospital] Scales

Stands
Stretchers
Stethoscopes
Walkers
Wheel chairs

Formulation HWS-256 is effective at eliminating odors on porous surfaces such as drapes, carpets, bedding, shower curtains and non-porous surfaces such as walls and floors. Excellent for fire restoration.

Other suggested Uses: Homes, Veterinary Clinics, Fish Markets, Kennels, Trash Compactors, Offices, Beauty Salons, Locker Rooms, Health Spas, Conference rooms, Elevators, Smoking Areas, Lounges, Day Care Centers, Dry Cleaners, Theaters, Farms, Auditoriums and Churches.

Effective against the following pathogens:

[Bacteria:]

Pseudomonas aeruginosa¹

Salmonella enterica

Staphylococcus aureus1

Acinetobacter baumannii

Acinetobacter calcoaceticus

Bordetella bronchiseptica

Chlamydia psittaci

Enterobacter aerogenes

Enterobacter cloacae

Enterobacter cloacae - NDM-1

Enterococcus faecalis – Vancomycin Resistant [VRE]

Escherichia coli¹

Escherichia coli - NDM-1

Fusobacterium necrophorum

Klebsiella pneumoniae1

Klebsiella pneumoniae - NDM-1

Legionella pneumophila

Listeria monocytogenes

Pasteurella multocida

Proteus mirabilis

Proteus vulgaris

Salmonella enteritidis

Salmonella typhi

Serratia marcescens

Shigella flexneri

Shigella sonnei

Staphylococcus aureus - Community Associated Methicillin-Resistant [CA-MRSA] [NRS384] [USA300]

Staphylococcus aureus - Community Associated Methicillin-Resistant [CA-MRSA] [NRS123] [USA400]

Staphylococcus aureus - Methicillin resistant [MRSA]

Staphylococcus aureus - Vancomycin Intermediate Resistant [VISA]

Staphylococcus epidermidis²

Streptococcus faecalis1

Streptococcus pyogenes [Strep]

¹ATCC & antibiotic-resistant strain ²antibiotic-resistant strain only

[Fungi:]

Aspergillus niger

Candida albicans

Trichophyton mentagrophytes [Athlete's Foot Fungus] [a cause of Ringworm] [a cause of Ringworm of the foot]

[Viruses:]

- *Adenovirus Type 4
- *Adenovirus Type 7 at 2 oz. per gallon {Note for Reviewer: 2 oz. per gallon dilution disinfection directions must be used if Adenovirus Type 7 is listed on the label}
- *Hepatitis B Virus [HBV]
- *Hepatitis C Virus [HCV]
- *Herpes Simplex Virus Type 1
- *Herpes Simplex Virus Type 2
- *Human coronavirus
- *HIV-1 [AIDS virus]
- *Influenza A Virus / Hong Kong

(Note to supplemental registrant: if one of the following pathogens with ** are used must include statement "in association with the organism Influenza A Virus/Hong Kong")

[Influenza Virus** associated with Influenza] [Flu Virus** associated with the flu]

[**in association with the organism Influenza A/ Hong Kong]

- *Respiratory Syncytial Virus [RSV]
- *Rotavirus [WA]
- *Rubella virus
- *SARS Associated Coronavirus [SARS] [cause of Severe Acute Respiratory Syndrome]
- *Vaccinia virus

[Animal viruses:]

- *Avian Influenza virus (H5N1)
- *Avian polyomavirus
- *Canine distemper virus
- *Feline leukemia virus
- *Feline picornavirus
- *Infectious bovine rhinotracheitis virus
- *Infectious bronchitis virus [Avian IBV]
- *Newcastle Disease virus
- *Pseudorabies virus [PRV]
- *Rabies virus
- *Transmissible gastroenteritis virus [TGE]

{Note to Reviewer: These statements for claims against enveloped emerging viral pathogens shall not appear on marketed (final print) product labels.}

EMERGING VIRAL PATHOGENS

This product meets the criteria to make claims against certain emerging viral pathogens from the following viral category[ies]:

- Enveloped Viruses
- Large Non-Enveloped Viruses

For an emerging viral	follow the direction for use for the
pathogen that is a/an	following organisms on the label:
Enveloped virus	Adenovirus type 7 ATCC VR-7
Large, non-enveloped	Adenovirus type 7 ATCC VR-7
virus	

FORMULATION HWS-256 has demonstrated effectiveness against viruses similar to [name of emerging virus] on hard, non-porous surfaces. Therefore, FORMULATION HWS-256 can be used against [name of emerging virus] when used in accordance with the directions for use against Adenovirus type 7 VR-7 on hard, non-porous surfaces. Refer to the [CDC or OIE] website at [pathogen-specific website address] for additional information. OR

[Name of illness/outbreak] is caused by [name of emerging virus]. FORMULATION HWS-256 kills similar viruses and therefore can be used against [name of emerging virus] when used in accordance with the

directions for use against Adenovirus website at [website address] for addit	ionai iniormatior	1.		

SI NO PUEDE LEER EN INGLES, PREGUNTE A SU SUPERVISOR SOBRE LAS INSTRUCCIONES DE USO APROPIADAS ANTES DE TRABAJAR CON ESTE PRODUCTO.

DISINFECTION				
DILUTION: 1:256	½ ounce per gallon of water			
[660 ppm quat]	1 ounce per 2 gallons of water			
	2 ounces per 4 gallons of water			
	2½ ounces per 5 gallons of water			
	4 ounces per 8 gallons of water			
DILUTION: 1:128	1 ounces per gallon of water			
[1320 ppm quat]	2 ounces per 2 gallons of water			
	4 ounces per 4 gallons of water			
	5 ounces per 5 gallons of water			
	8 ounces per 8 gallons of water			
DILUTION: 1:64	2 ounces per gallon of water			
[2640 ppm quat]	4 ounces per 2 gallons of water			
	8 ounces per 4 gallons of water			
	10 ounces per 5 gallons of water			
	16 ounces per 8 gallons of water			
SANITIZATION				
DILUTION: 1:256	½ ounce per gallon of water			
[660 ppm quat]	1 ounce per 2 gallons of water			
	2 ounces per 4 gallons of water			
	2½ ounces per 5 gallons of water			
	4 ounces per 8 gallons of water			

DILUTION CHART		
Correct Solution Strength		
0.39% [1:256, ½ oz. per gallon]		
PRODUCT	WATER	
½ oz.	1 gallon	
2 ½ oz.	5 gallons	

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

[To [remove] [insert] [the] [dispenser system name] container place hand securely under the container, slide release lever to the right and pull the container out]

{Note to reviewer: For a 1/2 oz. per gallon dilution – trigger spray is 32 oz.}:

Add 0.125 oz. per [trigger spray bottle] [trigger sprayer]

Add 2 oz. per 4 gallon mop bucket

{Note to reviewer: For a 2 oz. per gallon dilution – trigger spray is 32 oz.}:

Add ½ oz. per [trigger spray bottle] [trigger sprayer]

Add 8 oz. per 4 gallon mop bucket

{Note for reviewer: For labels that list medical premises and metal and / or stainless steel surfaces, one of the following statements must be used:}

This product is not to be used as a terminal sterilant / high level disinfectant on any surface or instrument that [1] is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or [2] contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. [This product may be used to preclean or decontaminate critical or semi-critical devices prior to sterilization or high-level disinfection.]

This product is not for use on medical device surfaces.

HWS-256 EPA Reg. No. 47371-129 EPA Submission 2018-05-30 **DISINFECTION / CLEANING / DEODORIZING DIRECTIONS:** Remove heavy soil deposits from surface. Then thoroughly wet surface with a use-solution of ½ ounce of concentrate per gallon of water or equivalent. [Use 2 oz. per gallon of water to kill Adenovirus Type 7]. The use-solution can be applied with a cloth, mop, sponge, or coarse spray, or soaking. For sprayer applications, use a coarse spray device. Spray 6-8 inches from the surface, rub with a brush, cloth or sponge. Do not breathe spray. Let solution remain on surface for a minimum of 10 minutes. Rinse or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished.

{Note for reviewer: One of the following statements must be used:}

Food contact surfaces must be thoroughly rinsed with potable water. This product must not be used to clean the following food contact surfaces: utensils, glassware and dishes.

This product is not for use on food contact surfaces.

For Human Coronavirus, treated surfaces must remain wet for 1 minute. Wipe dry with a clean cloth, sponge or mop or allow to air dry.

For Influenza Virus Type A, treated surfaces must remain wet for 2 minutes. Wipe dry with a clean cloth, sponge or mop or allow to air dry.

{Note to reviewer: one of the following two statements will be used:}

BACTERICIDAL STABILITY OF USE-DILUTION: Tests confirm that Formulation HWS-256, when diluted in 200 ppm hard water [via use of automatic dispensing devices], remains effective against Pseudomonas aeruginosa, Staphylococcus aureus and Salmonella enterica for [up to 7 days] [for up to one week] [for up to one month] [for up to 2 months] [for up to 3 months] [up to 4 months] [up to 5 months] [up to 6 months] [up to 7 months] [up to 8 months] [up to 9 months] [up to 10 months] [up to 11 months] [up to 12 months] [up to one year] when stored in a sealed container such as a spray bottle. If product becomes visibly dirty or contaminated, the use-dilution must be discarded and fresh product prepared. Always use clean, properly labeled containers when diluting this product. Bactericidal stability of the use-dilution does not apply to open containers such as buckets or pails. {or}

Prepare a fresh solution daily or more often if the solution becomes visibly dirty or diluted.

TOILET BOWLS [/ URINALS] Swab bowl with brush to remove heavy soil prior to cleaning or disinfecting. Clean by applying use-solution around the bowl and up under the rim. Stubborn stains may require brushing. To disinfect, first preclean to remove heavy soil, then remove or expel over the inner trap the residual bowl water. Pour in 3 oz. of the use-solution. Swab the bowl completely using a scrub brush or mop, making sure to get under rim. Let stand for 10 minutes or overnight, then flush.

FUNGICIDAL DIRECTIONS:

For use in areas such as locker rooms, dressing rooms, shower and bath areas and exercise facilities follow disinfection directions.

MILDEWSTATIC INSTRUCTIONS: Will effectively control the growth of mold and mildew plus the odors caused by them when applied to hard, nonporous surfaces such as walls, floors, and table tops. Apply use-solution of ½ oz. per gallon of water with a cloth, mop, sponge, or coarse spray. Make sure to wet all surfaces completely. Let air dry. Repeat application weekly or when growth reappears.

To control the growth of mold and mildew on large inflatable non-porous plastic and rubber structures [animals, promotional items, moonwalks, obstacle course play and exercise equipment]: Thoroughly clean all surfaces with soap or detergent and rinse with water. Saturate surfaces with a use solution of ½ oz. per gallon of water with a cloth, mop, sponge, or coarse spray. Make sure to wet all surfaces completely. Let air dry. Repeat application weekly or when growth reappears. Ventilate buildings and enclosed spaces. Do not use equipment until treatment has been absorbed, set or dried.

CLEANING AND DISINFECTING HARD NONPOROUS SURFACES ON PERSONAL PROTECTIVE EQUIPMENT [RESPIRATORS]:

Preclean equipment if heavily soiled to ensure proper surface contact. Add ½ oz. of **Formulation HWS-256** to one gallon of water. [Use 2 oz. per gallon of water to kill Adenovirus Type 7]. Gently mix for a uniform solution. Apply solution to hard, nonporous surfaces of the respirator with a brush, coarse spray device, sponge, or by immersion. Thoroughly wet all surfaces to be disinfected. Treated surfaces must remain wet for 10 minutes. Remove excess solution from equipment prior to storage. Comply with all OSHA regulations for cleaning respiratory protection equipment (29 CFR §1910.134).

*KILLS HIV-1 [AIDS VIRUS] AND HBV [HEPATITIS B VIRUS] AND HCV [HEPATITIS C VIRUS] ON PRECLEANED, HARD NON-POROUS ENVIRONMENTAL SURFACES / OBJECTS PREVIOUSLY SOILED WITH BLOOD / BODY FLUIDS in health care settings or other settings in which there is an expected likelihood of soiling of inanimate surfaces / objects with blood / body fluids, and in which the surfaces / objects likely to be soiled with blood / body fluids can be associated with the potential for transmission of Human Immunodeficiency Virus Type I [HIV-1][associated with AIDS] or Hepatitis B Virus [HBV] or Hepatitis C Virus [HCV].

Special Instructions for Disinfection, Cleaning and Decontamination against HIV-1 [AIDS Virus] or HBV or HCV on Surfaces / Objects Soiled with Blood / Body Fluids:

Personal Protection: Disposable protective gloves, gowns, face masks, and eye coverings must be worn during all cleaning of blood / body fluids and during decontamination procedures.

Cleaning Procedures: Blood / body fluids must be thoroughly cleaned from surfaces / objects before application of disinfectant.

Contact Time: Mix ½ oz. of Formulation HWS-256 per gallon of water [or equivalent dilution]. HIV-1 [AIDS virus] is inactivated after a contact time of 4 minutes at 25°C [77°F] [room temperature]. HBV and HCV are inactivated after a 10 minute contact time. Use a 10-minute contact time for all other viruses, fungi, and bacteria listed. Use appropriate contact time as listed on label for all other viruses[,] [and] bacteria [and fungi] claimed.

Disposal of Infectious Materials: Blood / body fluids must be autoclaved and disposed of according to federal, state, and local regulations for infectious waste disposal.

[DISINFECTANT] [FOR] [NAIL] [MANICURE] SALON [BARBER] [SHOPS] [TANNING SALONS] [HAIR SALONS] [TATTOO PARLORS] [HEALTH CLUBS] [SPA SURFACES] INSTRUMENTS AND TOOLS DISINFECTION [BACTERICIDE] / * VIRUCIDE / FUNGICIDE DIRECTIONS:

Mix ½ oz. of **Formulation HWS-256** per gallon of water [or equivalent dilution] to disinfect hard, nonporous instruments and tools. [Use 2 oz. per gallon of water to kill Adenovirus Type 7.] Completely immerse combs, brushes, rollers, razors, scissors, blades, manicure and other salon instruments and tools for 10 minutes. For heavily soiled instruments and tools, a preliminary cleaning is required. Rinse thoroughly and dry before use. Prepare a fresh solution daily or more often if the solution becomes visibly diluted, cloudy or soiled. **Note:** Plastics may [can] remain immersed until ready to use. Stainless steel shears and instruments must be removed after 10 minutes, rinsed, dried and kept in a clean, non-contaminated receptacle. Prolonged soaking may cause damage to metal instruments.

DISINFECTION OF HARD, NON-POROUS SURFACES IN FOOTBATHS

To remove body oils, dead tissue, soil and all other buildups or organic matter on inanimate surfaces after using the footbath, drain the water and thoroughly clean all hard, non-porous surfaces with soap or detergent, then rinse with water. Saturate surfaces with a use solution of ½ oz. per gallon of water [or equivalent use dilution] to exposed surfaces with a cloth, mop, sponge or sprayer. [Use 2 oz. per gallon of water to kill Adenovirus Type 7]. For spray applications, use a coarse spray device. Do not breathe spray. Brush or swab thoroughly and allow solution to stand for 10 minutes. After the unit has been thoroughly disinfected, rinse all surfaces with fresh water. Do not use equipment until treatment has been absorbed, set or dried.

CLEANSING OF BODY SURFACES AND BODY ORIFICES OF HUMAN REMAINS: This product removes body secretions, soil, and blood, along with their accompanying malodor, from the surfaces and orifices of human remains. Using a sponge or washcloth, bathe the entire body with a use-solution of ½ oz. per gallon of water. [Use 2 oz. per gallon of water to kill Adenovirus Type 7.] A soft hand brush may be employed on surfaces other than the face. Prepare a fresh solution for each [cadaver] remains or when solution becomes visibly dirty or diluted.

FARM PREMISE, LIVESTOCK, POULTRY & TURKEY HOUSE DISINFECTANT

DILUTION: 1:256 ½ ounce per gallon of water

{or}

[DILUTION: ½ oz.] per gallon of water]

[Use 2 oz. per gallon of water to kill Adenovirus Type 7.]

- 1. Remove all animals and feeds from premises, trucks, coops, crates, and enclosures.
- 2. Remove all litter and manure from floors, walls, and surfaces of barns, pens, stalls, chutes, vehicles, and other facilities and fixtures occupied or traversed by animals.
- 3. Empty all troughs, racks, and other feeding and watering appliances.
- 4. Thoroughly clean all surfaces with soap or detergent, and rinse with water.
- 5. Saturate all hard non-porous surfaces with the recommended disinfecting solution for a period of 10 minutes.
- 6. Immerse all halters, ropes, and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure.
- 7. Ventilate buildings, coops, cars, trucks, boats, and other closed spaces. Do not house animals or employ equipment until treatment has been absorbed, set, or dried.
- 8. After treatment with disinfectant, thoroughly scrub feed racks, troughs, automatic feeders, fountains, and waterers with soap or detergent, and rinse with potable water before reuse.

VETERINARY PRACTICE / ANIMAL CARE / ANIMAL LABORATORY / ZOOS / PET SHOP / KENNELS DISINFECTION DIRECTIONS:

For cleaning and disinfecting hard nonporous surfaces: equipment used for animal food or water, utensils, instruments, cages, kennels, stables, catteries, etc. Remove all animals and feeds from premises, animal transportation vehicles, crates, etc. Remove all litter, droppings and manure from floors, walls and surfaces of facilities occupied or traversed by animals. Empty all feeding and watering appliances. Thoroughly clean all surfaces with soap or detergent and rinse with water. Saturate surfaces with a use-solution of ½ oz. of **Formulation HWS-256** per gallon of water [or equivalent dilution] for a period of 10 minutes. [Use 2 oz. per gallon of water to kill Adenovirus Type 7.] Wipe or allow to air dry. Ventilate buildings and other closed spaces. Thoroughly scrub all treated surfaces that come into contact with food, including equipment used for feeding or watering, with soap or detergent and rinse with potable water before reuse. Do not house animals or employ equipment until treatment has been absorbed, set or dried.

FOR HEAVY DUTY CLEANING AND / OR ODOR CONTROL: When greater cleaning is desired, use 1 - 2 oz. of Formulation HWS-256 per gallon of water. Heavily soiled areas may require repeated cleaning before treatment.

CITRUS CANKER DISEASE CONTROL

For prevention of Citrus Canker Disease through treatment of equipment. Effective against Xanthomonas axonopodis pv. citri [Citrus Canker Disease] at 2000 ppm active quat. Treatments can be applied to trucks, attached trailers, and field equipment including cargo area, wheels, tires, undercarriage, hood, roof, fenders, and any other hard nonporous equipment taken into infested areas.

Saturate surfaces with a 1:84 use-dilution [5 oz. per 3½ gallons of deionized water] [or equivalent dilution] [2000 ppm active quat] for a period of 10 minutes. Allow to air dry. All surfaces that come in contact with food or crop must be rinsed with potable water before reuse. To prevent the spread of Citrus Canker Disease by this artificial means of transportation, treatments are made by trigger spraying, dipping or brushing. Thoroughly rinse or launder clothing before reuse. Rinse footwear before reuse.

TO SANITIZE NON-FOOD CONTACT HARD NON-POROUS SURFACES:

[Add] [mix] ½ oz. of **Formulation HWS-256** per gallon of water to sanitize [hard nonporous] surfaces. Treated surfaces must remain wet for 60 seconds. Wipe dry with a sponge, mop, or cloth or allow to air dry. Do not use in food preparation, food handling and food storage areas. This product is not to be used on glassware, dishware, cookware or utensils.

TO SANITIZE BARBER [SHOP] / SALON [TANNING SALON] [HEALTH CLUB] [SPA SURFACES] INSTRUMENTS [EQUIPMENT] AND TOOLS: {Not For Use in California} Immerse precleaned [barber / salon] instruments, [and] tools] [or personal protective equipment] such as combs, brushes, [rollers], razors, scissors, blades and manicure instruments [eye protection] in a use-solution [dilution] of 2 oz. of [this product] Formulation HWS-256 per gallon of water [or equivalent dilution] for at least [60 seconds] [one minute]. Rinse thoroughly and dry before use. Prepare a fresh solution daily or more often if [the use] solution becomes visibly diluted, cloudy or soiled.

NOTE: Plastics may remain immersed until ready to use. Stainless steel shears and instruments must be removed after 10 minutes, rinsed, dried, and kept in a clean non-contaminated receptacle. Prolonged soaking may cause damage to metal instruments.

SANITIZATION OF [WHIRLPOOL [BATH[S] [UNITS]]:

After using the [whirlpool [unit] [bath]], drain and refill with fresh water to [just cover the intake valve] [cover the highest jet] [2 inches above the highest jet]. Add ½ oz. of **Formulation HWS-256** for each gallon of fresh water added. Start the pump to circulate the solution. Wash down the sides, [[deck,] [seat of chair lift,] [any related equipment,]] and any uncovered hard non-porous surfaces on the [bath] [unit] with a clean swab, brush or sponge. Treated surfaces must remain wet for at least [60 seconds] [one minute]. After the [unit] [bath] has been thoroughly sanitized, drain the solution from the [unit] [bath]. Wipe dry with a clean sponge or cloth or allow to air dry. Repeat for heavily soiled units.

Deodorizing directions:

Nursing Homes, Hospitals, Hotels, Schools, Restaurants: Using 1/2 oz. in chemical toilets, waste receptacles, bed pans, drainage bottles, diaper pails, hampers, disposals, commodes and air conditioner pans will eliminate odors.

Mopping Solutions, Automatic Scrubbers: Use 1/2 oz. per gallon of cleaning solution to eliminate undesirable odors.

Laundry: ½ oz. per load added during the final rinse cycle deodorizes all offensive odors.

Air Freshener/Automotive Uses: 2 oz. per gallon of water will effectively neutralize damp musty odors caused by mildew in storage areas, basements, closets and bathrooms. Effective on smoking and cooking odors [garlic, fish, onions, etc.]. Automobile odors from tobacco, musty carpet smell and beverage smells will be eliminated.

Carpets: $\frac{1}{2}$ oz. per gallon of shampoo solution eliminates odors associated with urine, vomit, smoke, and mildew. Reapply after cleaning for freshening effects. Allow to dry.

RV Holding Tanks: Toilet waste: cover bottom of holding tank with water and add $\frac{1}{2}$ oz. If odors return before time to empty, simply add $\frac{1}{2}$ oz. to the tank. Kitchen waste: $\frac{1}{2}$ oz. of **Formulation HWS-256** to gray water tank as needed to control malodors created by dirty dish water.

Pet Odors: Use 2 - 3 oz. per gallon of water or desired concentration, for urine, feces, and vomit, in carpet and upholstery. Clean prior to application then spray onto affected areas. Test hidden area for colorfastness. Allow 10 minutes contact time. Then blot with clean cloth. Allow to dry. Also effective on pet bedding and litter boxes.

Sewage Backup, Water, Smoke Damage: Use 1-2 oz. per gallon of water or desired concentration. Spray over affected areas before and after cleaning and extraction. Allow ten minutes contact time. Use proper ventilation; open windows.

Cleaning Solution: Dilute $\frac{1}{2}$ oz. per gallon of water for cleaning of kitchen counters, tables, walls, bathrooms, toilet seats, mopping floors and large routine applications.

EPA Reg. No. 47371-129 EPA Submission 2018-05-30 {This whole page is Not for Use in California}

WATER, SMOKE DAMAGE RESTORATION AGAINST ODOR-CAUSING BACTERIA AND FUNGI FOR HOME, INSTITUTIONAL, INDUSTRIAL AND HOSPITAL USE:

This product is particularly suitable for use in water damage restoration situations against odor causing bacteria on the following porous and semi-porous materials: carpets, carpet cushions, subfloors, drywall, concrete, brick, trim and frame lumber, tackless strip and paneling. Using appropriate dilution, saturate the affected materials with enough product to remain wet for at least 10 minutes.

Sewer Backup and River Flooding: During mitigation procedures, dilute ½ oz. of the concentrate per gallon of water, allowing for the diluting effect of absorbed water within saturated materials. Remove gross filth or heavy soil along with non-salvageable materials. Saturate all affected areas with a coarse spray device before and after cleaning and extraction.

Carpets, Carpet Cushions and Other Porous Materials such as Subfloors, Drywall, Concrete, Brick, Trim and Frame Lumber, Tackless Strip and Paneling: For water damage from a clean source, extract excess water. Test hidden area for colorfastness. Dilute ½ oz. of the concentrate per gallon of water, allowing for the diluting effect of absorbed water within saturated materials. Remove gross filth or heavy soil. Saturate all affected areas with a coarse spray device. Roll, brush or agitate into the materials and allow materials to remain wet for 10 minutes. Follow with a thorough extraction. Dry rapidly and thoroughly.

(Note to reviewer: For Nonrefillable Containers, Label has Household and Residential Uses)

STORAGE AND DISPOSAL

Store in original container in areas inaccessible to children. Nonrefillable container. Do not reuse or refill this container. Wrap [container] and put in trash or offer for recycling if available.

Store in original container in areas inaccessible to children. Nonrefillable container. Do not reuse or refill this container. Wrap [container] and put in trash or offer for reconditioning if appropriate.

{Note to reviewer: For Nonrefillable Containers for commercial, industrial, and institutional uses – all sizes – No Reuse Rinsate Statement for Public Health Use products. Chapter 13, Table C3 of the Label Review Manual's statements about burning are labeled as "Not required;" therefore, no incineration language is provided for plastic containers.}

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Open dumping is prohibited. Store in original container in areas inaccessible to children.

Pesticide Disposal:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal:

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. *[Plastic and Metal Containers:]* Triple rinse as follows: Fill container ¼ full with water and reclose the container. Agitate vigorously, and dispose of rinsate consistent with pesticide disposal instructions. Repeat two more times. Then offer for recycling if available or puncture and dispose in sanitary landfill or by other procedures approved by state and local authorities. Follow pesticide disposal instructions for rinsate. If not triple rinsed, these containers are acute hazardous wastes and must be disposed in accordance with local, state, and federal regulations.

[Metal containers only:] DO NOT cut or weld metal containers.

[Bag in Box Containers:] Completely empty bag into application equipment. Then offer for recycling if available or dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

{Note to reviewer: For Nonrefillable Sealed Containers: Packaging options can be in sealed containers or bottles designed for use dilution systems to reduce worker exposure to the concentrate. None of these can be triple rinsed because they are closed sealed containers. The following text will be used on these sealed container types:}

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Open dumping is prohibited. Store in original container in areas inaccessible to children. **Pesticide Disposal:**

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal:

Nonrefillable container. Do not reuse or refill this container. Wrap empty container and put in trash.

{Note to reviewer: For Refillable Containers – all sizes – No Reuse Rinsate Statement for Public Health Use products. Chapter 13, Table C3 of the Label Review Manual's statements about burning are labeled as "Not required;" therefore, no incineration language is provided for plastic containers.}

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Pesticide Storage:

Open dumping is prohibited. Store in original container in areas inaccessible to children.

Pesticide Disposal:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal:

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before refilling is the responsibility of the refiller. Cleaning the container before final disposal is the responsibility of the person disposing of the container.

[Plastic or Metal Containers:] To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously, and dispose of rinsate consistent with pesticide disposal instructions. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning. If not available, puncture and dispose in sanitary landfill. If not triple rinsed, these containers are acute hazardous wastes and must be disposed in accordance with local, state, and federal regulations.

[Metal containers only:] DO NOT cut or weld metal containers.

{SECONDARY CONTAINER LABEL}

{Note to reviewer: This secondary container label will be used only when the product is diluted at 1/2 oz. per gallon of water or equivalent}

FORMULATION HWS-256

The product in this container is diluted as directed on the pesticide product label.

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse.

Follow the directions for use on the pesticide label when applying this product.

[EPA Reg. No. 47371-192]

This container is not for the sale or distribution of the diluted product.

ADDITIONAL LABELING / INSERTS / REFERENCE SHEETS

{Note to reviewer: If additional labeling / insert / reference sheets are used, the following information may appear on the additional labeling / insert / reference sheet :}

- Product name
- EPA Reg. No.
- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- Read the label affixed to the container for [this product] [product name] before applying.
- Use of [this product] [product name] according to this labeling is subject to the use precautions and limitations imposed by the label affixed to the container for [product name].

{Note to reviewer: The following are optional graphics and marketing language.} {For Bag-in-Box Containers:}

For Bag – In – Box Containers:

How to use this package:

This package is designed to be used with dilution control systems only. Open package and connect to dispense according to directions on box top.

Trigger Sprayers:

Fill bottle from dispenser.

Apply to surfaces as specified in directions above.

Mop Buckets:

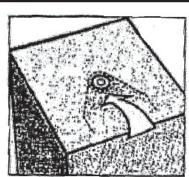
Fill bucket from dispenser.

Set up "Wet Floor" signs.

Mop floor surface as specified in directions above

OPENING INSTRUCTIONS

- 1. Position box with perforation up.
- 2. Press In circle.
- 3. Lift flapitear along perforation.
- 4. Retrieve litting on bag.
- Remove clear dust-cap from bag fitting.
- Twist dispenser connector onto pag fitting.
- Place bag-in-box into position on dispenser shelf.
- 8. Close dispensor (if applicable).



INSTRUCCIONES PARA ABRIR

- 1. Ponge la caje con la perforación hacta arriba.
- 2. Empuje el circulo hecla adentro.
- Levente le pessone arrancardola de la caja a lo lergo de la perforación.
- 4. Saque el adaptedor que este en la boise.
- Cuite la tapa transparente contra el polyo que tiene el adspisador de la bolsa.
- Enrosque el conectador despachador al estaprador.
- Pongo la "beg-irs-box" (bossa en caja) en posición en el mostrador de despacho.
- Cierre el despeciador (si corresponde).

{Note to reviewer. The following may be used only if the supplemental registrant has obtained UL Classification.}



FLOOR COATING AND FINISHING MATERIAL AS TO SLIP RESISTANCE ONLY (Control No.)

{Note to reviewer: The following may be used only if the supplemental registrant has obtained a Kosher Certification.}

{Any Kosher Symbol such as:}
[Kosher]



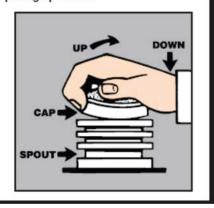
THE FOLLOWING SECTIONS CONTAIN PROPRIETARY LANGUAGE AND GRAPHICS.

LANGUAGE AND GRAPHICS IN THE FOLLOWING SECTIONS CAN ONLY BE UTILIZED WITH LONZA APPROVAL AND BY THE SUPPLEMENTAL REGISTRANTS APPROVED FOR ITS USE.

{Note to reviewer: Optional proprietary graphics} {Section 1}

ACTION PAC® CAP REMOVAL

With carton in upright position, hold spout firmly with one hand while "peeling" cap off with other hand. It's easily done by catching fingertips under edge of top flange of cap & pulling up & back.



ACTION PAC®

- 1. Punch out circle.
- Lift flap and slide spout into circle.
- Lower flap and lock spout in place.
- 4. Attach spigot before tipping box or placing on shelf.

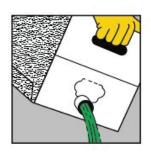
ACTION PAC®

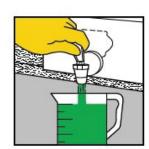
For use in Smart System or Action Control System[®] II automatic dilution systems.

COLOR CODED ACTION LOCK CONNECTOR II

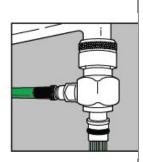


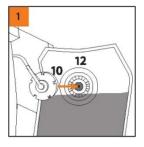
FLOOR CLEANING/ SPRAY BOTTLE

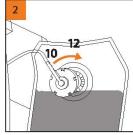


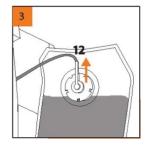














- [XX] quart[s]; [YY] L Bag Yield Rate†
- [XX] oz/gal (dilution factor) makes [YY] gallons, which is equivalent to: ([ZZ] 2-gallon mop buckets) ([AA] quarts) †
- Each [XX] case makes [YY] end-use gallons

†{note to reviewer: this rate must be representative of the dilution used on the product directions for use. For example: $\frac{1}{2}$ oz./gal (1:256) makes 84 end-use gallons, or Each 4x1 case makes 338 end-use gallons}

{Note to reviewer, the following is optional marketing language to be used with Insta-Use Refill Cartridge and bottle}

{Section 2}

Individual cartridges are not for resale.

(Note to reviewer, the following are instructions for Insta-Use Refill Cartridge and bottle)

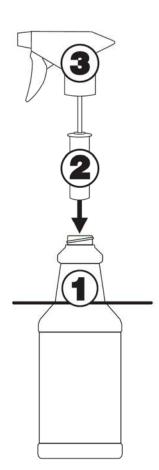
Cartridge Instructions {choose one of the following}:

Insert cartridge as shown into empty spray bottle. Fill bottle with water to fill line on spray bottle. Note: Do not overfill bottle. Overfilling will prevent cartridge from emptying.

{OR}

Insert cartridge as shown into empty spray bottle. Fill bottle with water as directed on the product label. Note: Do not overfill bottle. Over filling will prevent cartridge from emptying.

Refill Directions



- 3) Attach sprayer to bottle & shake gently.
- 2) Insert cartridge into bottle neck.
- 1) Fill with water to fill line.

NOTE: Overfilling will prevent the cartridge from emptying completely.

Refill Directions





3) Attach sprayer to bottle & shake gently.



2) Insert cartridge into Bottle neck.



1) Water fill level

NOTE: Overfilling will prevent the cartridge from emptying completely.